

## REDESCRIPTION OF *NERTHRA PRAECIPUA* (HETEROPTERA: GELASTOCORIDAE) FROM CHILE<sup>1</sup>

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**ABSTRACT:** *Nerthra praecipua*, known previously from the holotype female, has been rediscovered in Chile. The species is redescribed, supplementing the incomplete original description of the damaged female holotype. This species belongs to the *Nerthra alaticollis* group, which occurs in Australia and Chile.

*Nerthra praecipua* Todd was described by Todd (1957) from a unique female in the Reed Collection (acquired by C. J. Drake, now housed in the National Museum of Natural History, Washington, D. C.) that had been badly damaged by dermestids, rendering a complete description impossible. A single additional female has been collected by the junior author on Chiloe Island, Chile, providing the first definitive locality and permitting further description of the species. It is held in the J. T. Polhemus Collection (JTPC).

### *Nerthra praecipua* Todd

*Nerthra praecipua* Todd, 1957:151, Fig. 9 (Holotype, female, Chile, Reed Collection, now in USNM); Todd, 1961:472 (checklist).

Supplemental description to that of Todd (1957).

Female: Length 8.10 mm; width of pronotum 5.50 mm; width of abdomen 6.02 mm.

General color stramineous, with scattered dark markings on veins of hemelytra, head, median lobe of pronotum, scutellum; depressions on head, median lobe of pronotum, fuscous to piceous; anterior 2/3 of lateral margins of abdominal tergites III–VI dark; scutellum with lateral tumescence fuscous, anterolateral angles piceous. Thoracic venter mostly stramineous, mesosternum medially mostly piceous except median anterior margin and medial protuberance; abdominal venter mostly dark, with scattered yellowish markings, laterally and distally lighter. Legs stramineous, with fuscous markings; fore femora broadly infuscated, with fascia at distal 2/3; middle and hind femora with fascia at basal 1/3, irregular annulus at distal 2/3, distal extreme, fuscous; tibia dark distally.

Structural characters: Head excavate anteriorly, without apical tubercle but with small apical protuberance, with superapical and lateral tubercles (Fig. 4), set with clavate setae, ocelli absent. Pronotum with median lobe raised, sculptured, set with scattered short clavate setae. Abdominal tergites sinuate, extending laterally beyond hemelytra (see Todd, 1957, fig. 9), with groups of moderate-length clavate setae on posterolateral angles. Hemelytra without membrane, partially fused, with thin medial line of demarcation between hemelytra, set with short clavate setae along lateral margins; network of veins more extensive than depicted by Todd (loc. cit.).

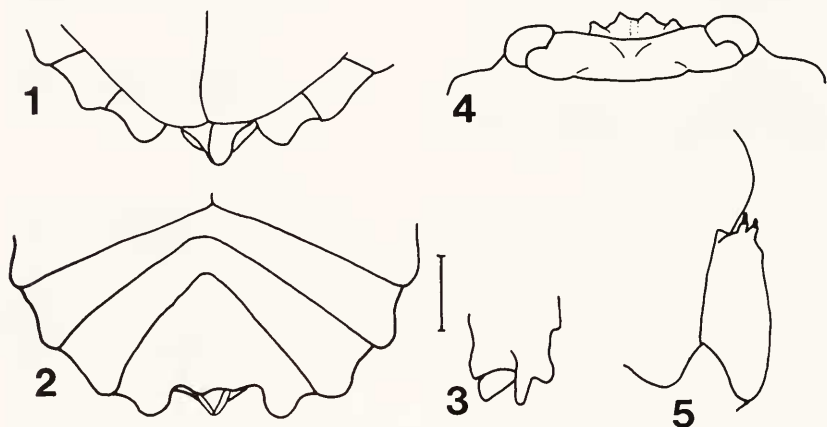
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Fore femur with edge of anterior dilation forming about a 50° angle with posterior edge; anterior trochanter with two black-tipped denticles (Fig. 5).

Abdominal sternites almost symmetrical (Fig. 2); ovipositor lobes slightly asymmetrical, located posterodorsally (Figs. 1, 3).



Figures 1 - 5. *Nerthra praecipua* Todd, female. (scale bar = 1.0 mm). 1 - 3. Abdominal terminalia. 1. dorsal view. 2. ventral view. 3. lateral view. 4. Head, dorsal view. 5. Anterior trochanter, with black-tipped denticles anteriorly.

**Material examined.** 1 female, Chile, Chiloe Island, Puente la Caldera, 41° 40' S, 74° 02' W, 15 Feb. 1996, T. Cekalovic K. (JTPC).

**Comparative notes.** *N. praecipua* does not resemble any other South American species, and is the only American member of the *N. alaticollis* group. It is the only American species with sternite VII prolonged posteriorly and lacking emargination, with the female genital structures located dorsally. In Todd's (1960) key to Australian species of *Nerthra*, *N. praecipua* drops at couplet 3 because it lacks ocelli; thus, in this regard, it is unique in the *alaticollis* group. Todd (loc. cit.) stated that species of the *alaticollis* group have an apical tubercle, but in *N. adspersa* (Stål) and *N. stali* (Montandon) it is no more than a small apical protuberance, similar to that of *N. praecipua*.

**Habitat.** The habitat in which the single specimen was collected is surrounded on all sides by forest, situated in hills of moderate altitude. The vegetation is native and semihumid. The trunks and limbs of trees in various states of decay are covered with mosses, lichens, and adhering ferns of the genus *Hymenophyllum*. The vegetative community is a typical damp *Nothofagus* forest.

The specimen was separated from a sample of humus (TC-427) by means

of a Berlese funnel, in company with various arachnids and insects including Peloridiidae (Coleorrhyncha: *Peloridora* sp.).

**Zoogeography.** *N. praecipua* provides another link between the hemipteran faunas of Austral South America and Australia. Concerning *N. praecipua*, Todd (1957) stated that "The projecting median portion of the last abdominal sternite and general appearance would seem to indicate that this species is most closely related to the species of the *alaticollis* group found in Australia." This is an interesting observation (supported by independent investigations by JTP) because Chile and adjacent austral Argentina are Gondwanan in origin, and several diverse groups found there are phylogenetically linked to New Zealand, Australia, and New Guinea (e.g. mayflies, Edmunds, 1975; Aradidae, Isoderminae, Monteith, 1982:649; Peloridiidae, Evans, 1981; *Nothofagus*, Ash, 1982:355).

The projecting abdominal sternite VII of females and dorsal location of the female genital structures is a synapomorphy for the clade comprising the *Nerthra alaticollis*, *laticollis*, *elongata*, and *rugosa* groups established by Todd (1955, 1960). The *laticollis* group occurs in Australia and Melanesia (mainly Solomon Islands and New Guinea), the *elongata* and *alaticollis* groups occur on Australia, but the latter also on Chile. The *rugosa* group has only a few species that occur on various islands and continental land masses, and apparently all are halophilous and are rarely if ever found far from the seashore.

The associated Peloridiidae, a hemipteroid family of almost exclusively flightless bugs (only one species with rare macropters), is of interest because of its association with, and zoogeographical parallels to, flightless *Nerthra* species. The primary ecological difference between them is that peloridiids are primarily cool-adapted moss inhabitants not yet found on New Guinea, whereas the flightless *Nerthra* are mostly warm-adapted litter inhabitants that are absent from New Zealand. Evans (1981:395) speculated that peloridiids will be found in the *Nothofagus* forests of New Guinea.

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## SCIENTIFIC NOTE

### AN UNUSUAL OCCURRENCE OF CADDISFLIES (TRICHOPTERA: PHRYGANEIDAE) IN A PENNSYLVANIA POPULATION OF THE PURPLE PITCHER PLANT, *SARRACENIA PURPUREA*

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While studying the contents of one hundred and four leaves collected from a population of purple pitcher plants in Christner-Bog, Somerset County, Pennsylvania, on March 13, 17, and 22, 1996, five caddisfly larvae were recovered. Three larvae were alive in their cases, one larva was dead in a case, and one was dead and covered by a fungus identified as a species of *Saprolegnia* (Saprolegniaceae) (Coker, 1923). The larvae were identified as belonging to the genus *Oligostomis* (Phryganeidae). Adult caddisflies collected in the same site in May 1996, were identified as *Oligostomis ocelligera* (Walker). This is the first report of *Oligostomis* larvae in pitcher plants. The presence of this caddisfly is probably related to the flooding of the habitat during the late winter and early spring.

Purple pitcher plants are carnivorous plants, usually found in nitrogen-deficient, *Sphagnum*-dominated bogs or swamps. A wide variety of species of insects and other arthropods are associated with the pitcher plant. These invertebrates can be classified as regular inhabitants, prey, occasional associates, or plant herbivores (Rymal and Folkerts, 1982). Caddisfly larvae have been reported in pitcher plants (Brower and Brower, 1971; Cresswell, 1991), yet it is not clear what their presence signified.

The water level in wetlands can rise significantly after snow melt or rain, submerging the pitcher plant leaves. This would permit aquatic organisms to move inside and/or on top of the leaves. Pittman et al. (1996) proposed that aquatic predators may gain entrance to the pitchers during periods of high water and flooding, and feed on the inhabitants. While it is possible caddis larvae may have inadvertently entered the pitcher plant leaves due to flooding, we suggest that the larvae recovered in this study entered the pitcher plant leaves in search of food. *Oligostomis*

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